

Date: Friday, 3/2/2007 10:34:21 AM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 350/355 AS X-TUBE FWD
Job Number : 31012	
Estimate Number : 12485	
P.O. Number : <i>N/A</i>	Part Number : D350748101
This Issue : 3/2/2007 S.O. No. : <i>N/A</i>	Drawing Number : N/A
Prsht Rev. : NC	Project Number : N/A
First Issue : <i>MA</i>	Drawing Revision : N/A
Previous Run : 29760	Material : <i>N/A</i>
Written By : <i>[Signature]</i>	Due Date : 3/30/2007
Checked & Approved By : <i>[Signature]</i>	Qty: 1 Um: Each
Comment : Est Rev: A New Issue 06-07-05 JLM	
Est Rev: B Update qty of MS21042L5 06-09-12 KJ	

## Additional Product

Job Number: 

Seq. #	Machine Or Operation	Description
1	DC	DOCUMENT CONTROL

Comment: Photocopy bluefile & type labels per PPPD350-748-101 CHG001 *CS 07.03.13*

2.0 31012A X-TUBE AS 350/355 HI FWD UNDER REVIEW

Comment: Sub-Component X-TUBE AS 350/355 HI FWD

D350-748-141 B *31012 A*

3.0 PACKAGING 1 PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1

Pick Packing Kit

4.0 D35001 350 SADDLE

Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

350 SADDLE

Batch: *B28794-*

5.0 D35011 BUSHING

Comment: Qty.: 16.0000 Each(s)/Unit Total: 16.0000 Each(s)

BUSHING

Batch: *B29799-*

*[Signature]*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 3/2/2007 10:34:21 AM

User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 31012

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total: 16.0000 Each(s)

Bolt

Batch: M103962 -

7.0

AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

bolt

Batch: M102552 -

8.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Bolt

Batch: M102115 -

9.0

AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total: 32.0000 Each(s)

Washer

Batch: M103691 -

10.0

AN960JD516

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

Washer

Batch: M103641 -

11.0

MS21042L4

Nut



Comment: Qty.: 24.0000 Each(s)/Unit Total: 24.0000 Each(s)

Nut

Batch: M102552 -

12.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Nut

Batch: M102536 -

✓ EFB/10/220

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: 2 Date: 07/06/22  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 3/2/2007 10:34:21 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 31012

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

*CY07/06/22 ①*

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-101

Location: \_\_\_\_\_

PPP Rev: *B*

*CY07/06/22 / 07/06/22 ①*

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*07/06/22 ①*

Job Completion



*U 07.06.22*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



Date: Friday, 3/2/2007 10:34:36 AM  
User: Kim Johnston



# Process Sheet



Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : X-TUBE AS 350/355 HI FWD UNDER REVIEW	<p>OK</p> <p>9.02.03.02</p>
Job Number : 31012A		
Estimate Number : 12484		
P.O. Number : N/A	Part Number : D350748141	
This Issue : 3/2/2007 S.O. No. : N/A	Drawing Number : D350-748-141 U/R	
Prsht Rev. : NC	Project Number : N/A	
First Issue : N/A	Drawing Revision : C	
Previous Run : 29760A	Material : N/A	
Written By :	Due Date : 3/30/2007	Qty: 1 Um: Each
Checked & Approved By : <u>07.03.02</u>		
Comment : Est Rev: A New Issue 06-07-05 JLM		
Est Rev: B Update cadplate process 06-09-12 KJ		



Additional Product LOSI 9381

Job Number: 

Seq. #	Machine Or Operation:	Description :
1.0	DC	DOCUMENT CONTROL
		
<p>Comment: DOCUMENT CONTROL</p> <p>Photocopy bluefile and create labels as per PPP D350-748-141 CHG001</p>		

2.0	D6017115	Crosstube Material
		
<p>Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)</p> <p>Crosstube Material</p> <p>D6017-115</p> <p>2.339" OD X 2.000" ID</p> <p>Batch: <u>B27 471</u></p>		

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
		
<p>Comment: MORI SEIKI CNC LATHE LARGE</p> <p>1-Fill tube with sand &amp; install plugs on both ends as per Folio FA648</p> <p>2-Turn first side as per Folio FA648</p> <p>3-Deburr &amp; Inspect for surface damage. Repair damage within limits as per Dwg D350-748-141.</p>		

4.0	QC1	INSPECT ALL DIM TO DIM SHEET
		
<p>Comment: INSPECT ALL DIM TO DIM SHEET</p>		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Date: Friday, 3/2/2007 10:34:36 AM

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD UNDER REVIEW

Job Number: 31012A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA648

2-Deburr &amp; Inspect for surface damage. Repair damage within limits as per Dwg D350-748-141.

3-Scribe Part &amp; Batch as per Dwg D350-748-141

S.F. 07/03/03

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

S.F. 07/03/03

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

S.F. 07-03-07

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Remove all Machining Marks

S.F. 07-3-7

9.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: 3281

C 207103112 ①

Heat Treat to min 180 KSI As per Dwg D350-748-141

(MIL-T-6736 OR AMS 2759-1C)

Sand Blast tube after Heat Treat

Possible Supplier: Vac Aero

Ensure Certificate of Conformity is attached

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive &amp; Inspect For Transit Damage

Ensure certificate of conformaty is attached

S.F. 07/3/03 ①  
07/4/23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 3/2/2007 10:34:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD UNDER REVIEW

Job Number: 31012A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description:

11.0

QC6

DIMENSIONAL CHECK



*07 04.25 (1)*

Comment: DIMENSIONAL CHECK

12.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT

*EL 07/04/30*

13.0

QC5

INSPECT WORK TO CURRENT STEP



*07 05 02 (1)*

Comment: INSPECT WORK TO CURRENT STEP

14.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill Tube as per Dwg D350-748-141 Using DT8876 Drill Jigs,  
Set-up drill table as per QSI 010

2-Deburr

3-Engrave Part # and Batch # as per Dwg D350-748-141

4-Remove all marks from tube within limits of D350-748-141

5- Apply a light coat of LPS3 on the interior of tube

Batch: *104161*

*JD 7-6-12*

*EL 07/04/30*

15.0

QC6

DIMENSIONAL CHECK



*07 06 16 (1)*  
*DSI - 9381*

Comment: DIMENSIONAL CHECK

16.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: *3974*

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

*07/06/13 (1)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 3/2/2007 10:34:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD UNDER REVIEW

Job Number: 31012A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

*Handwritten:* 2/26/19 (1)

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

19.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

2-Prime Outside of Tube as per Dart QSI 005 4.2

*Handwritten:* } RT 07-06-20

20.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

*Handwritten:* M 07-08-21 (1)

21.0

D35021

SUPPORT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

SUPPORT

Batch: 28476

*Handwritten:* RT 07-06-22

22.0

D2856400

Abrasion Strip



Comment: Qty.: 1.2401 f(s)/Unit Total : 1.2401 f(s)

Abrasion Strip 7.10" long x2

Batch: 30822

*Handwritten:* RT 07-06-22

23.0

ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert

Batch: 19393

*Handwritten:* RT 07-06-22

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 3/2/2007 10:34:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD UNDER REVIEW

Job Number: 31012A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

24 0

AN960JD10

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Washer

Batch: 104118

8T 07-06-22

25 0

MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Clamp (per MIL-DTL-8783C)

Batch: 102712

8T 07-06-22

26 0

MS27039110

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Screw

Batch: 16836

8T 07-06-22

27 0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert, then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-141 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-141, Torque to 60-80 IN-LBS

8T 07-06-22

28 0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

29 0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-241

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

PPP 31012 10/4/22 (1)

QSI 9381  
Not really  
Necessary

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ Date: 07/06/22

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Date: Friday, 3/2/2007 10:34:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD UNDER REVIEW

Job Number: 31012A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

30.0

QC21

FINAL INSPECTION/W/O RELEASE



①

Comment: FINAL INSPECTION/W/O RELEASE

*Handwritten signature/initials*

Job Completion



*Handwritten date: 11-07-06-22*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	31012 A
<b>Description:</b> Crosstube Assembly (AS350/355 High Fwd)	<b>Part Number:</b>	D350-748-141
<b>Inspection Dwg:</b> D350-748-141 Rev: C		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

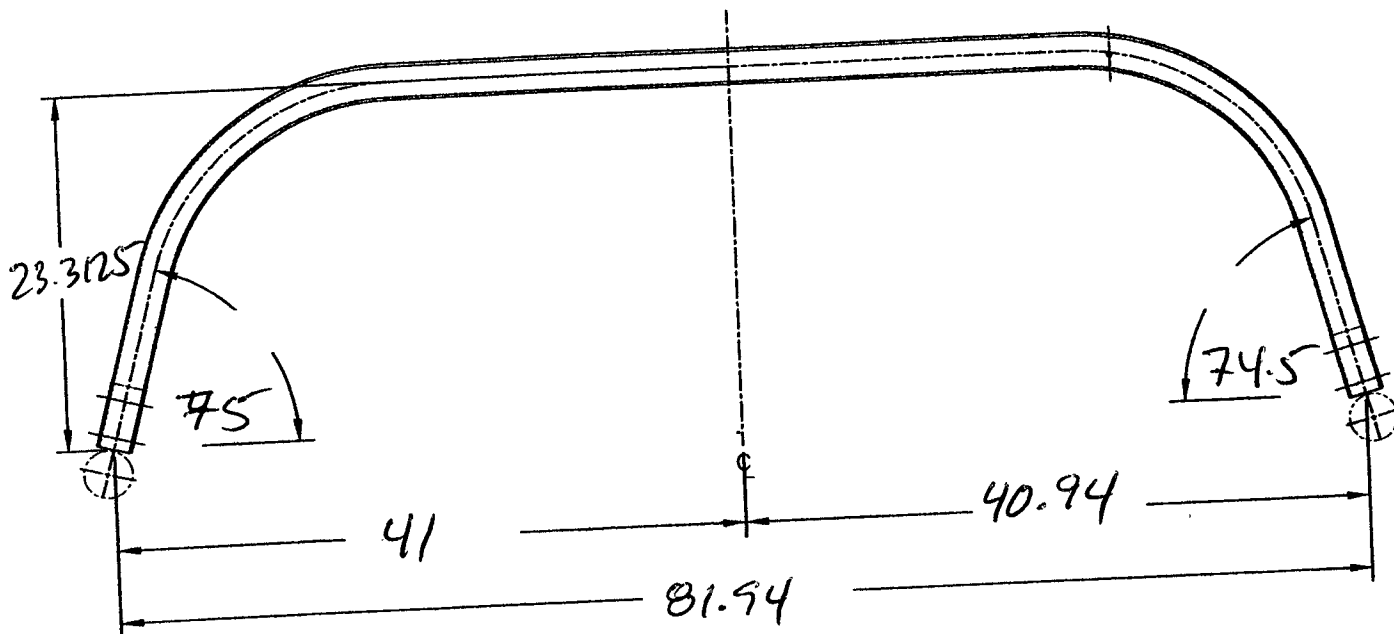
Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.243	✓			
	2.180	+0.005/-0.000	2.182	✓			
	2.180	+0.005/-0.000	2.184	✓			
	2.237	+0.005/-0.000	2.242	✓			
	2.272	+0.005/-0.000	2.277	✓			
	2.306	+0.005/-0.000	2.311	✓			
	2.339	+0.005/-0.000	2.344	✓			
	2.339	+0.005/-0.000	2.344				
	0.062	+/-0.010	.062	✓			
	4.26	+/-0.030	4.270	✓			
	R0.063	+/-0.010	R.063	✓			
	R0.50	+/-0.030	R.050	✓			
SIDE B	2.240	+0.005/-0.000	2.243	✓			
	2.180	+0.005/-0.000	2.182	✓			
	2.180	+0.005/-0.000	2.184	✓			
	2.237	+0.005/-0.000	2.242	✓			
	2.272	+0.005/-0.000	2.277	✓			
	2.306	+0.005/-0.000	2.311	✓			
	2.339	+0.005/-0.000	2.344	✓			
	2.339	+0.005/-0.000	2.344	✓			
	0.062	+/-0.010	.062				
	4.26	+/-0.030	4.270	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.50	+/-0.030	R0.50	✓			
	110.27	+/-0.060	110.29	✓			

<b>Measured by:</b> JS	<b>Audited by:</b> BG	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 07/03/02	<b>Date:</b> 07-03-02	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.11.09	New Issue (P/O D350-748-101)	KJ/JLM	BE

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 31012
<b>Description:</b> Crosstube High Fwd (AS350/355)		<b>Part Number:</b> D350-748-101
<b>Inspection Dwg:</b> D350-748-141 <b>Rev:</b> D		<b>Page</b> 1 of 1

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments

QC15 Inspection	<i>[Signature]</i> 0705-02
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

**DART**

DESIGN <i>qp</i>	DRAWN BY <i>qp</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D350-748-141	REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI FWD)	SCALE NTS
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6017-115 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.	

**RELEASED**06.10.31 *[Signature]*

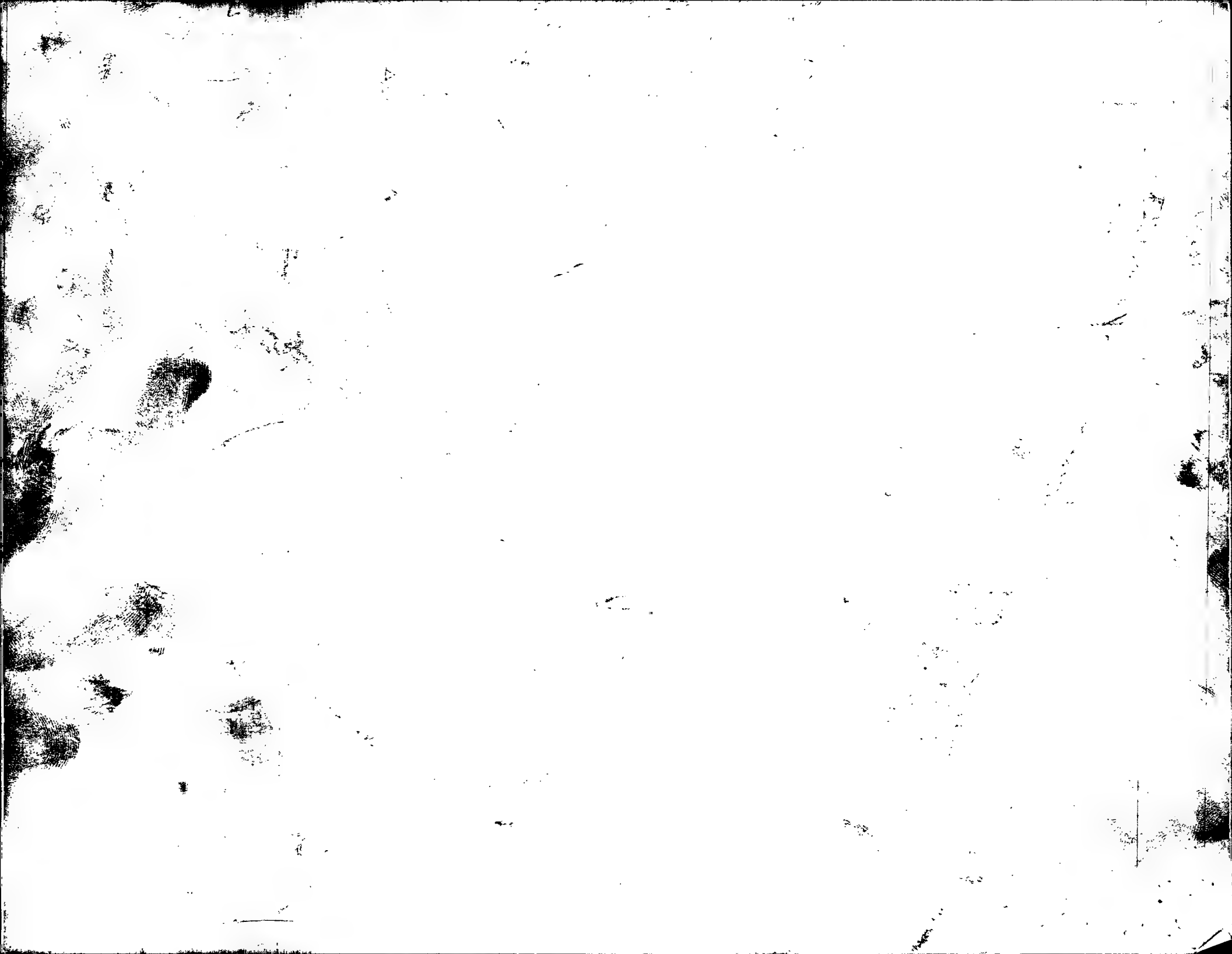
QTY	P/N	DESCRIPTION
X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
1	D6017-115	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

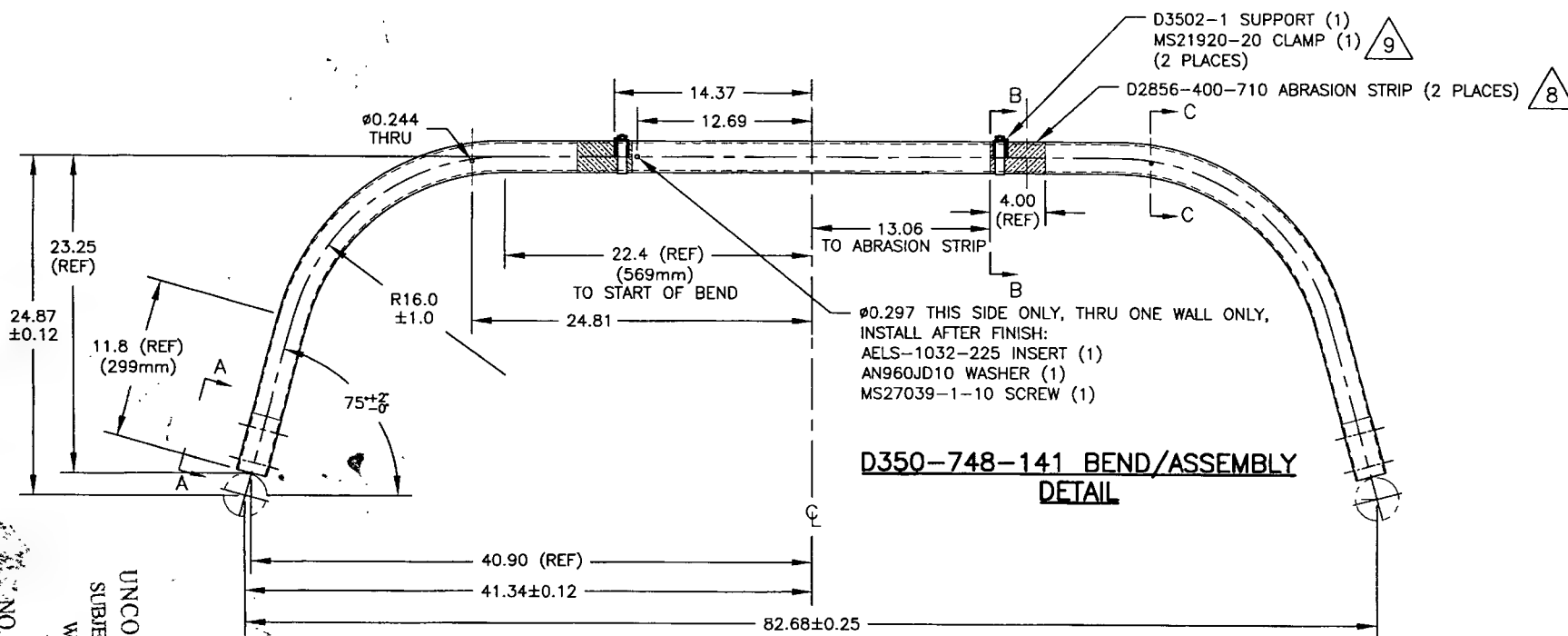
**D350-748-141 CROSSTUBE:**

- 1) MATERIAL: MANUFACTURED FROM D6017-115 OR D6015-125  
FINISHED LENGTH =  $110.27 \pm 0.06$
- 2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING **STOP COPY** STYLUS.
- 4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D. **ENGINEERING**
- 5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING **CONTROLLED COPY**
- 6) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2  
CADIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2  
**SUBJECT TO AMENDMENT WITHOUT NOTICE WORK ORDER NO. 31012A**
- 7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- 10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 11) ALL DIMENSIONS ARE IN INCHES
- 12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR  $\varnothing 0.297$  HOLE.

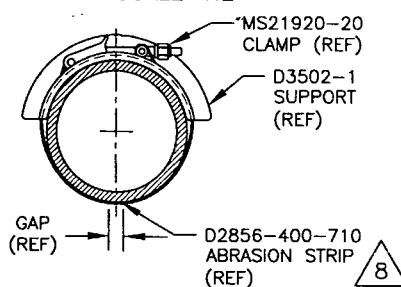
**UNDER REVIEW**07.02.16 *[Signature]*  
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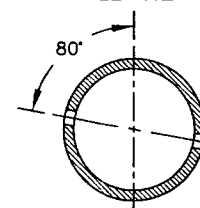




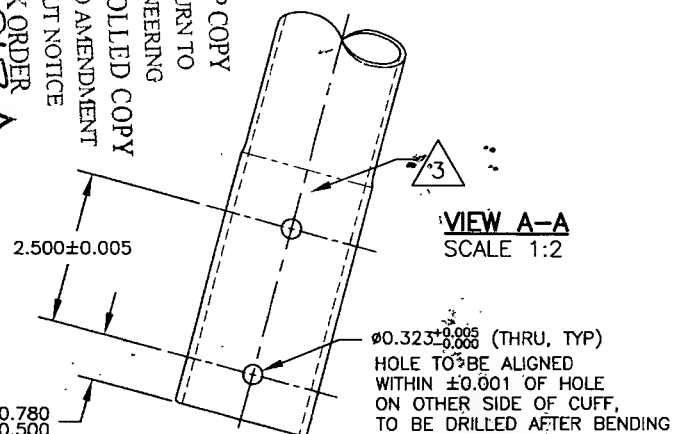
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SCALE 1:2



SECTION C-C  
SCALE 1:2



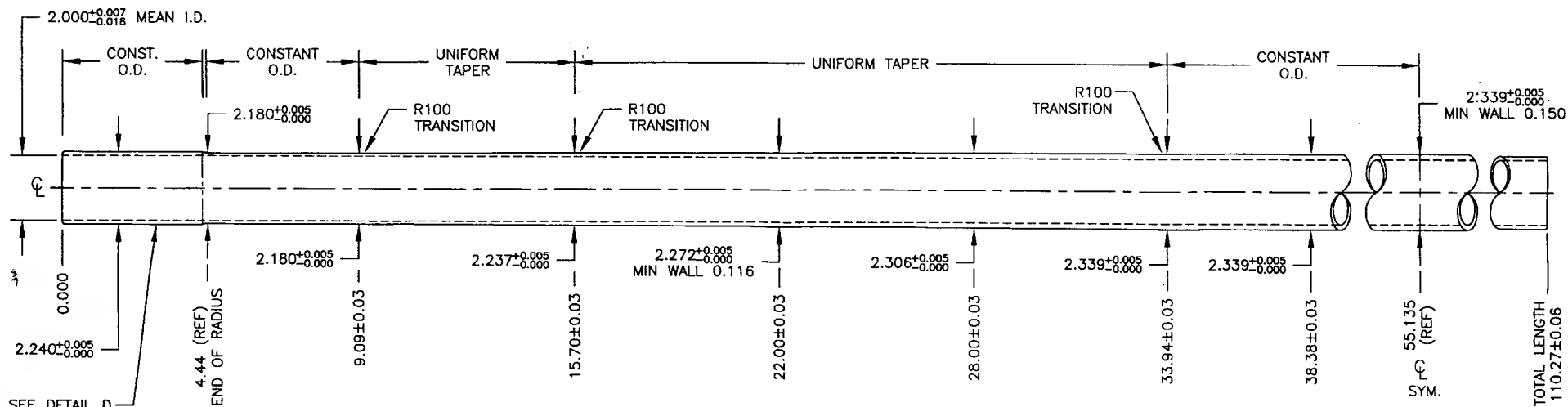
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SCALE 1:2



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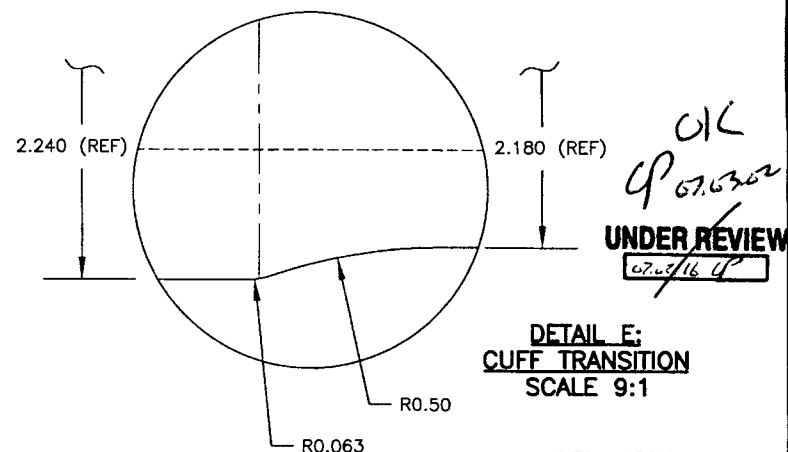
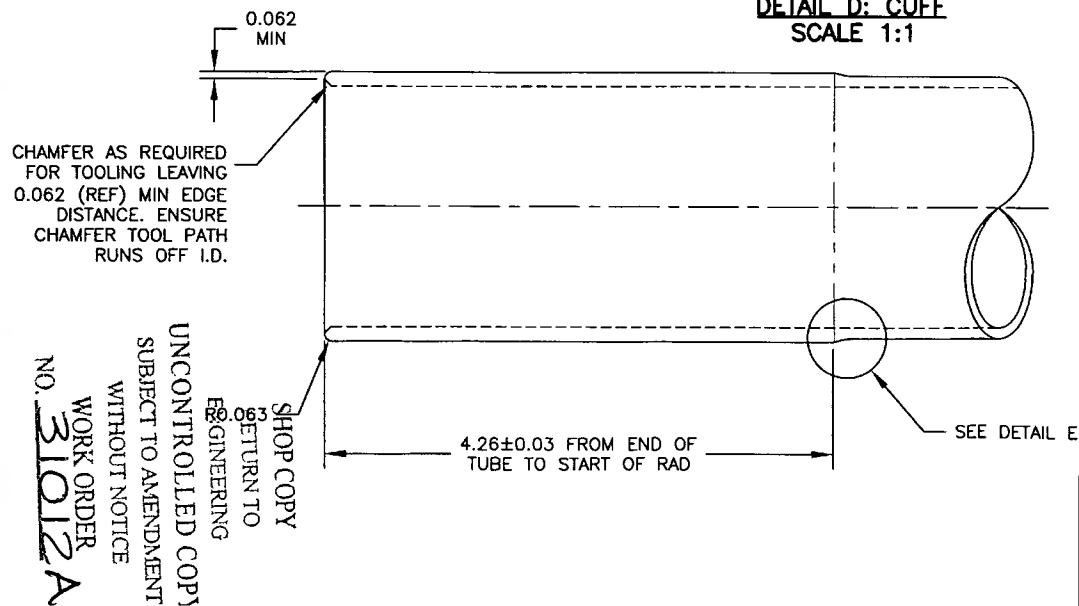
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		DATE	06.10.31			D350-748-141	SHEET 2 OF 3
						TITLE	SCALE
						CROSSTUBE (AS 350/355 HI FWD)	1:8



**D350-748-141 MACHINING DETAIL**

**DETAIL D: CUFF  
SCALE 1:1**



**DETAIL E:  
CUFF TRANSITION  
SCALE 9:1**

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MARKHAM, ONTARIO, CANADA

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REV. 0  
SHEET 3 OF 3

DATE

06.10.31

TITLE

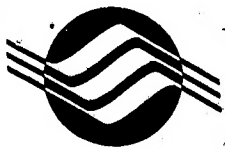
CROSSTUBE (AS 350/355 HI FWD)

SCALE

1:3







**VAC AERO**  
INTERNATIONAL INC.

# PACKING SLIP

OAK 85250-1

04/13/2007

MM / DD / YYYY

PAGE : 1

GST No. : R105468102



HEAD OFFICE  
1371 SPEERS ROAD, OAKVILLE, ONTARIO  
CANADA L6L 2X5  
TEL: (905) 827-4171 FAX: (905) 827-7489



QUEBEC DIVISION  
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC  
CANADA H4S 1C5  
TEL: (514) 334-4240 FAX: (514) 334-6269

BILL TO:

1DAR01  
DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

SHIP TO : DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
04/13/2007		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
274744		COD

LN	PART NO	DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	B/O QTY
01	D350-748	-141 Process Specifications: Procedure: 4353 HEAT TREATED TO 180 KSI PER AMS 2759-1C 100% HARDNESS TESTED AS PER ASTM E-18, HRC 40-43 MATERIAL: 4130 B31012A, B31014A, B31013A, B31015A, B31017A, B31016A	EA	6	6	0
02	LC	LOT CHARGE		1	1	C

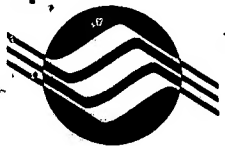
No claims for shortage in weight or count will be entertained, unless presented within 5 working days after receipt of materials by customer.



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT  
ANODIZING AND OTHER COATINGS



HEAT  
TREATING



**VAC AERO**  
INTERNATIONAL INC.

**RELEASE NOTE**

GST No.: R105468102

OAK 85250-1

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1371 SPEERS ROAD, OAKVILLE, ONTARIO  
CANADA L6L 2X5  
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☐ **2009 WYECROFT ROAD, UNIT B**  
OAKVILLE, ONTARIO  
CANADA L6L 6J4  
TEL: (905) 827-7377 FAX: (905) 827-1380

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CANADA H4S 1C5  
TEL: (514) 334-4240 FAX: (514) 334-6269

04/13/2007

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PAGE: 1

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DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

**SHIP TO:** DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

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K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
04/13/2007		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
274744		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D350-748	-141	EA	6	6	
<p>Process Specifications: Procedure: 4353 HEAT TREATED TO 180 RSI PER AMS 2759-1C 100% HARDNESS TESTED AS PER ASTM E-18, HRC 40-43 MATERIAL: 4130 B31012A, B31014A, B31013A, B31015A, B31017A, B31016A</p>					
<div><div>100% HARDNESS TESTED</div><div>Die: 06PLs</div><div>42/43 HRC</div><div>15 Apr 07</div></div> <div>VALIO TH. 28 Q.C.</div>					

I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

Authorized Q.C. Inspector



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT  
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS





**CERTIFICATE OF  
CONFORMANCE**

**CADORATH PLATING CO. LTD.  
2150 LOGAN AVENUE  
WINNIPEG, MANITOBA R2J-0J1**

**DATE:** Jun-18-2007

**CONSIGNEE TO:** Dart Aerospace Ltd.  
1270 Aberdeen St.  
Hawksbury, ON K6A 1K7

**W/O #:** 67994

**INVOICE #:** 34864

**CONTRACT OR  
PURCHASE ORDER #**

3974

**DESCRIPTION:** SKID

**QTY**

1

**P/N #** D350748141

**S/N #** B31012A

CADMIUM PLATE IAW AMS-QQ-P-416 TYPE 2 CLASS 1. MPI IAW  
ASTM-E-1444. BAKE HEAT CHART #7925 & #7942.

**CERTIFICATE:** I certify that the items indicated here on have  
been inspected and tested and conform to all specifications  
and requirements detailed on the contract or purchase order.

**Approved Inspector:**

*William Kornegay*

